

50X1-HUM

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Office of Electric Power, Bureau of Industry,  
[Ministry of Industry, North Korea], P'yongyang  
July 1, 1947

50X1-HUM

# TRANSMISSION SYSTEM

## Summary of Transmission Lines Wonsan Branch

Name of Transmission Line	Section Terminus	Voltage KV	Exact Length KM	Electric wire and cable Kind	Size	Kind of Main-tenance Towers	Remarks
Wonsan Transmission Line	From Pongnyong Transf. Sta. to Wonsan	66	89.007	Bar. heavy copper wire	72.6	Double Line	
Unhung	From Unhung Switch Sta. to Unhung Transf. Sta.	"	33.385	"	72.6	"	
Pak-tai-lyong	From Unhung Transf. Sta. to Pak-tai-lyong Transf. Sta.	"	24.369	"	"	"	
Chon-nae-ril	From Pak-tai-lyong Transf. Sta. to Chon-nae-ril Transf. Sta.	"	11.0	"	"	"	
Chon-nae-ril	From Wonsan Switch Sta. to Chon-nae-ril Transf. Sta.	"	30.08	"	"	"	
Unhung	From Wonsan Switch Sta. to Unhung Switch Sta.	"	35.735	"	"	"	
Unhung	From Unhung Switch Sta. to Unhung Transf. Sta.	"	7.236	"	"	"	
No. 2 Kalma	From Wonsan Transf. Sta. to No. 2 Kalma Transf. Sta.	"	9.85	"	"	"	
Munsan	From Unhung Transf. Sta. to Munsan Transf. Sta.	22	10.1	"	"	"	
Sinsang	From Munsan Transf. Sta. to Sinsang Transf. Sta.	"	8.9	"	"	"	
Wong'o	From Unhung Transf. Sta. to Wong'o Transf. Sta.	"	5.0	"	"	"	
Chinpyang	From Unhung Transf. Sta. to Chinpyang Transf. Sta.	"	11.425	"	4.50	"	
Yonghung Gang	From Chinpyang Transf. Sta. to Yonghung Gang	"	13.7	"	72.6	"	
Unsu	From Unhung Transf. Sta. to Unsu Transf. Sta.	"	10.0	"	72.6	"	
Yonghung Coal Mine	From Unsu Transf. Sta. to Yonghung Coal Mine	"	10.8	"	72.6	"	
Ullim	From Unsu Transf. Sta. to Ullim Transf. Sta.	"	40.426	"	72.6	"	
Sanggyong-dun	From post No. 84 Unhung Transf. Sta. to Sanggyong-dun Transf. Sta.	"	10.145	"	72.6	"	
Coal Mine	From post No. 125 Unhung Transf. Sta. to Coal Mine Transf. Sta.	"	9.2	"	72.6	"	
Kowon Coal Mine	From Kowon No. 1 Coal Mine Transf. Sta. to Kowon No. 2 Coal Mine Transf. Sta.	"	9.4	"	72.6	"	
Yonghung	From Kowon Transf. Sta. to Yonghung Transf. Sta.	"	11.905	"	5.0	"	
Kowon	From Yonghung Transf. Sta. to Kowon Transf. Sta.	"	26.26	"	5.0	"	
Chinbung	From post No. 43 Yonghung Transf. Sta. to Chinbung Transf. Sta.	"	5.6	"	72.6	"	
Munchon Coal Mine	From Chinbung Transf. Sta. to Munchon Coal Mine Transf. Sta.	"	11.2	"	5.0	"	
Sinbung Coal Mine	From Munchon Coal Mine Transf. Sta. to Sinbung Coal Mine Transf. Sta.	"	5.407	"	5.0	"	
Puksong	From Sinbung Coal Mine Transf. Sta. to Puksong Transf. Sta.	"	7.3	"	72.6	"	
Munpyang	From Puksong Transf. Sta. to Munpyang Transf. Sta.	"	14.7	"	72.6	"	

Name of Transformer Station	Source of Motive Power	Name of system and river
Santa-ril	Water power	Yang-nu
Sangpyang-ni	Water power	Yang-nu
Yonghung Gang	Water power	Yang-nu

Unhung-ma  
Hyesan-up  
Manju-Manju  
Electric Indus

\* presumably copper steel alloy lines must here

# TRANSMISSION SYSTEM

## Summary of Transmission Lines Wonsan Branch

Name of Transmission Line	Section Terminus	Voltage KV	Exist. Length KM	Electric wire and cable Kind	Kind of Main-structure	Remarks
Wonsan Transmission Line	From Wonsan Transf. Sta. to Inhung Transf. Sta.	66	87.007	Copper wire	7/2.6	Darkie Line
Inhung	From Inhung Transf. Sta. to Wonsan Transf. Sta.	"	33.585	"	7/2.6	"
Pak-tai-lyang	From post No. 20 Pak-tai-lyang Transf. Sta. to Inhung Transf. Sta.	"	24.364	"	"	"
Chon-nae-ri	From Inhung Transf. Sta. to Chon-nae-ri Transf. Sta.	"	11.0	"	"	"
In-chuk-kun-nu	From Wonsan Transf. Sta. to Inhung Transf. Sta.	"	30.08	"	"	"
Iryong	From Inhung Transf. Sta. to Iryong Transf. Sta.	"	35.735	"	"	"
Taeqang	From post No. 213 Iryong Transf. Sta. to Taeqang Transf. Sta.	"	7.236	"	"	"
No. 2 Kalma	From Wonsan Transf. Sta. to No. 2 Kalma Transf. Sta.	"	9.85	"	"	"
Munsan	From Inhung Transf. Sta. to Munsan Transf. Sta.	22	10.1	"	"	"
Sinsang	From Munsan Transf. Sta. to Sinsang Transf. Sta.	"	8.9	"	"	"
Wanp'o	From Inhung Transf. Sta. to Wanp'o Transf. Sta.	"	5.0	"	"	"
Chinpyong	From Wanp'o Transf. Sta. to Chinpyong Transf. Sta.	"	11.425	"	"	"
Yonghung Gang	From Chinpyong Transf. Sta. to Yonghung Gang	"	13.7	"	4.5	"
Unsu	From Inhung Transf. Sta. to Unsu Transf. Sta.	"	10.0	"	7/2.6	"
Yonghung Gold Mine	From Unsu Transf. Sta. to Yonghung Gold Mine	"	10.8	Barc heavy copper alloy wire	5.0	"
Ullim	From Inhung Transf. Sta. to Ullim Transf. Sta.	"	40.426	Copper wire	7/2.6	"
Sangpyong-dun	From post No. 84 Ullim Transf. Sta. to Sangpyong-dun Transf. Sta.	"	10.145	"	5.0	"
Kowon No. 1 Coal Mine	From post No. 145 Ullim Transf. Sta. to Kowon No. 1 Coal Mine	"	9.2	"	7/2.6	"
Kowon No. 2 Coal Mine	From Kowon No. 1 Coal Mine to Kowon No. 2 Coal Mine	"	9.4	"	"	"
Yonghung	From Kowon Transf. Sta. to Yonghung Transf. Sta.	"	11.905	"	5.0	"
Kowon	From Inhung Transf. Sta. to Kowon Transf. Sta.	"	26.26	"	"	"
Chinbung	From post No. 43 Yonghung Transf. Sta. to Chinbung Transf. Sta.	"	5.6	"	5.0	"
Munchon Coal Mine	From Chinbung Transf. Sta. to Munchon Coal Mine	"	11.2	"	7/2.6	"
Sinpyong Coal Mine	From Munchon Coal Mine to Sinpyong Coal Mine	"	5.487	"	5.0	"
Puk-sang	From Sinpyong Transf. Sta. to Puk-sang Transf. Sta.	"	7.3	"	7/2.6	"
Munpyong	From Wonsan Transf. Sta. to Munpyong Transf. Sta.	"	14.7	"	7/2.6	"

Name of Transformer Station	Source of motive power	Name of system and river
Sentae-ri	Water power	Yonghung Gang
Sangpyong-ni	Water power	Yonghung Gang
Yonghung Gang	Water power	Yonghung Gang

Unhung-gang  
Hyesan-up  
Munhung-gang  
Electric  
Indus

\*presumably copper steel alloy lines meant here

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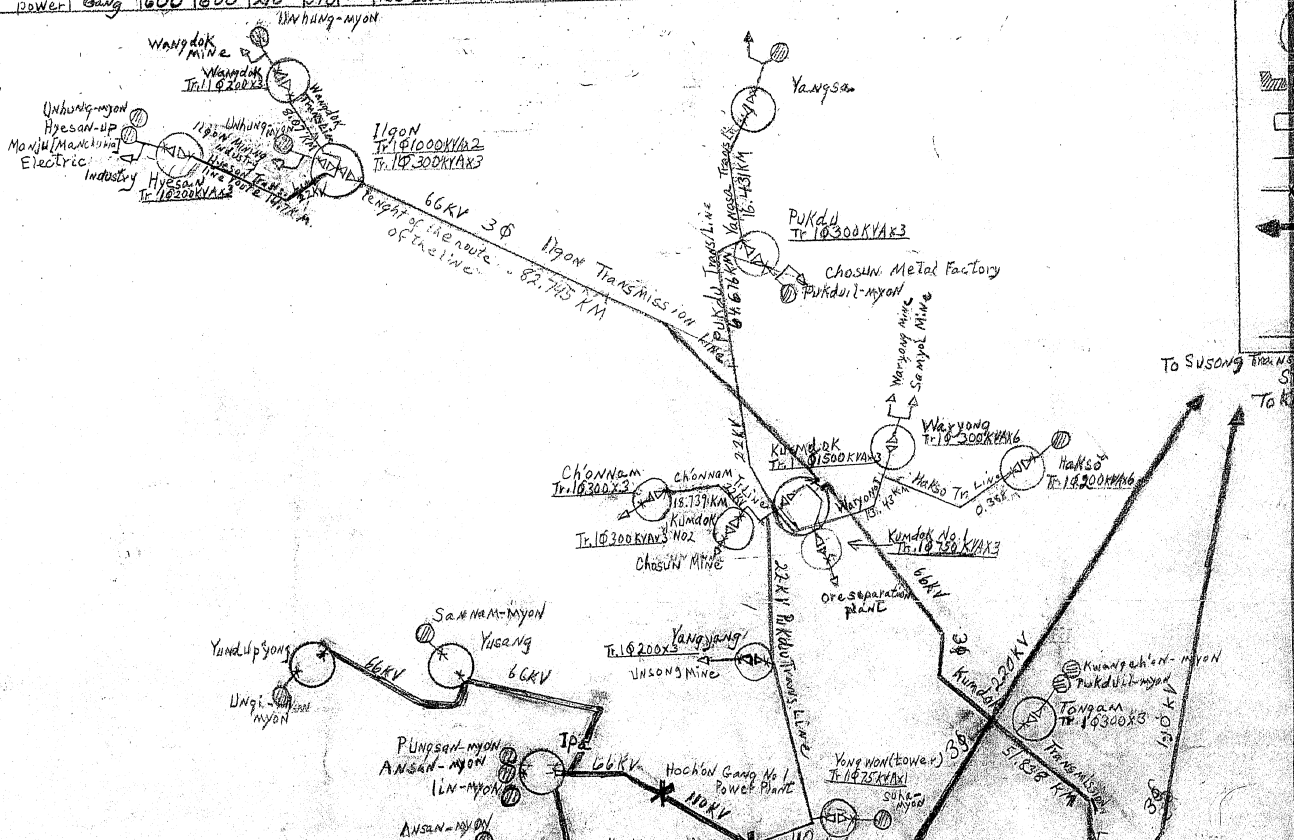
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SECURITY INFORMATION

## SECURITY INFORMATION

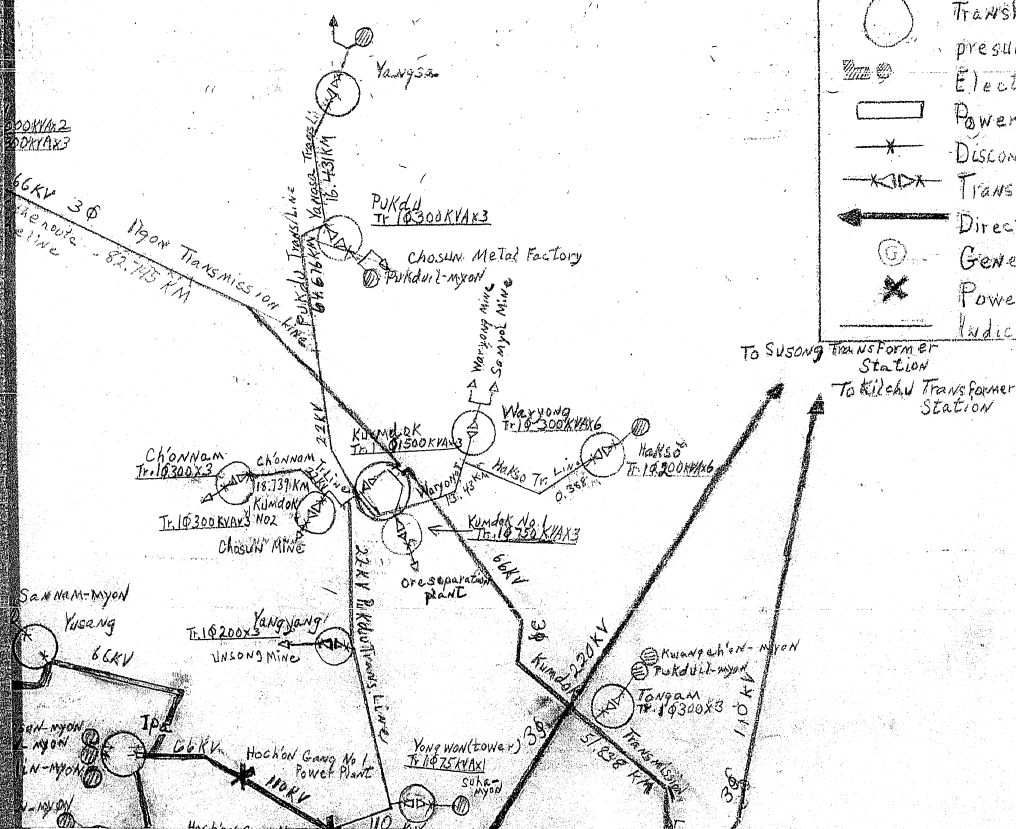
### Summary of Transformer Equipment

SUMMARY OF TRANSFORMER EQUIPMENT											
Name of Transformer Station	Source of Motive Power	Name of system and river	Output (kW)				Kind of Transformer	Voltage (KV)		No. of Transformer	
			MAXIMUM DRAINAGE PEAK	MAXIMUM DRAINAGE TIME	MAXIMUM DRAINAGE TIME	MAXIMUM DRAINAGE TIME		Primary	Secondary		
Water power	Water power	Water power	350	106	42	305	500 KVA	3.500	2.10	1	
Santa-rita	Water power	Water power	285	134	53	182	500 KVA	3.500	2.10	1	
Sangp'yang-Ni	Water power	Water power	600	600	210	390	500 KVA	3.500	2.10	1	
Yonghung Gang	Water power	Water power	600	600	210	390	500 KVA	3.500	2.10	1	



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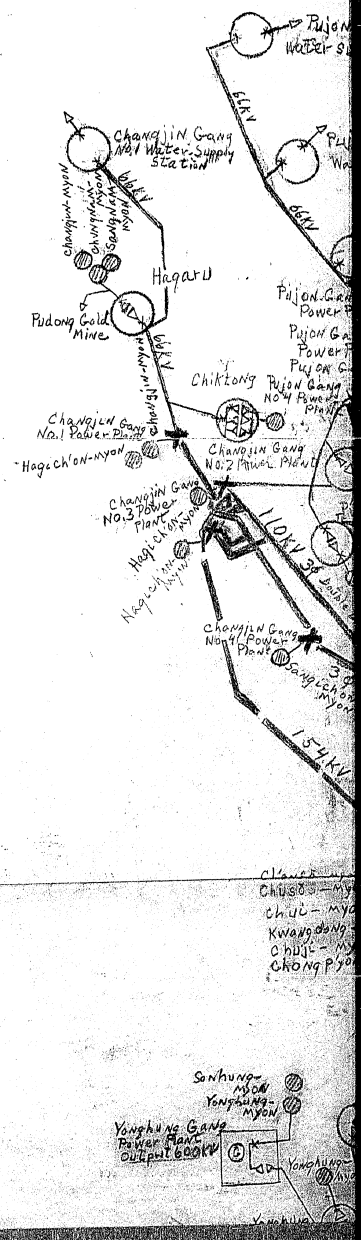
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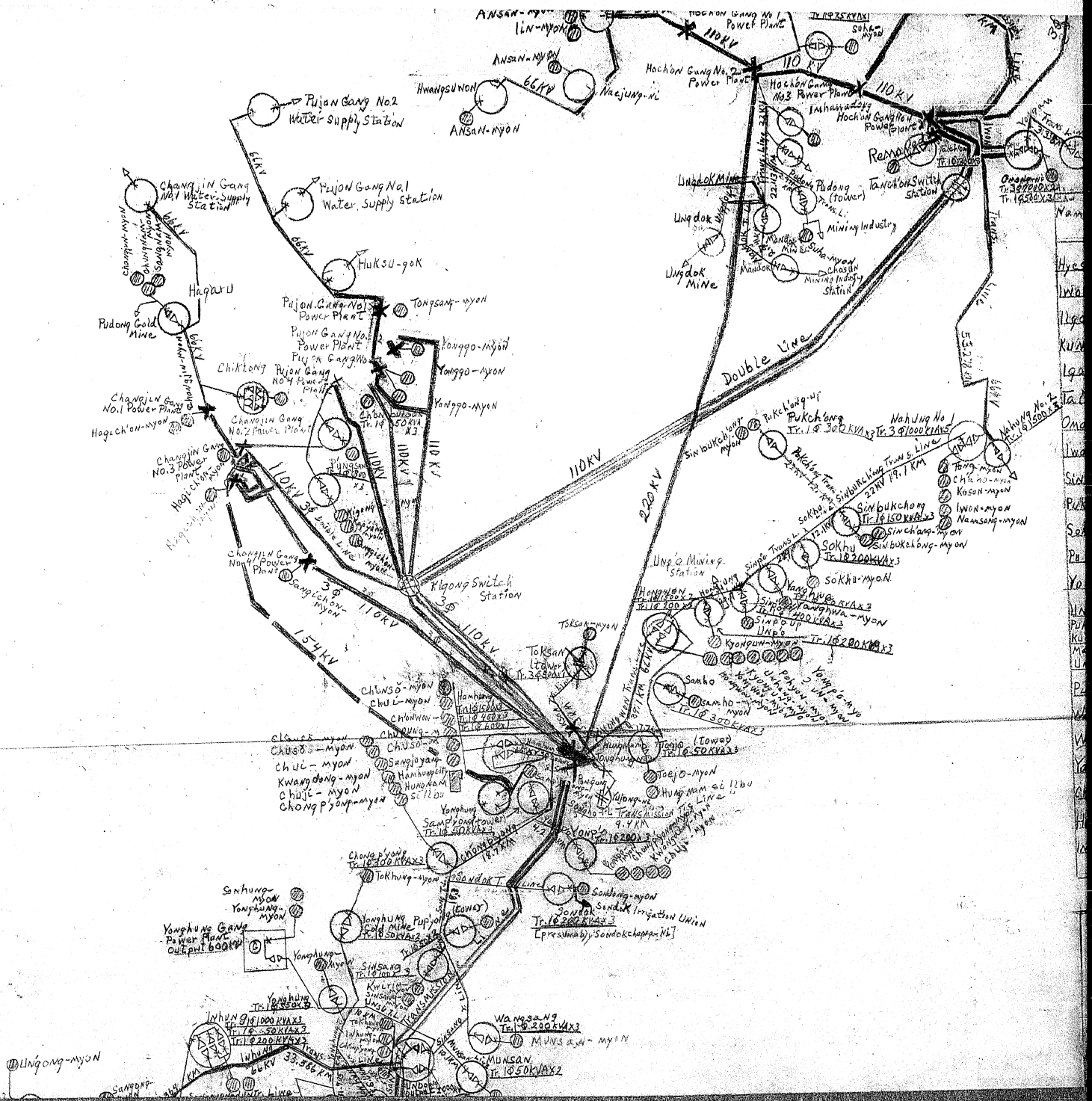


Sinkung Coal Mine	From Munchon Coal Mine to Sinkung Coal Mine	5.427	5.0	
Pukseong	From Munchon Transf. to Pukseong	7.3	5.0	
Munpyong	From Wonsan to Munpyong Smelter	14.7	7.6	Heavy wire
Steel Pipe Plant	From Munpyong Switch Sta. to Munpyong Steel Pipe Plant	4.09	5.0	Wood pole
Munpyong	From post No. 138 Munpyong to post No. 139 Munpyong	1.777		
No. 2 Sogok	From Wonsan Transf. Sta. to Sogok	5.7	7.6	Heavy wire
Anbyon	From " to Anbyon Transf. Sta.	13.6	7.6	Wood pole
Pachwa Branch	From " to Pachwa	1.863	5.0	
Sogok	From Sogok to Sogok	8	7.6	Heavy wire
Sangdong	From Wonsan to Sangdong	3.94	7.6	Wood pole
Sungong	From Wonsan to Sungong	1.661	7.6	
Wonsan	From Sambik to Wonsan	66	9.896	No. 2 Bare copper wire
Kalma Branch	From post No. 134 Kalma Transf. Line to Kalma No. 2 Transf. Sta.	22	1.6	Bare heavy copper wire
Kalma	From " to " No. 1	2.718	7.6	Heavy wire

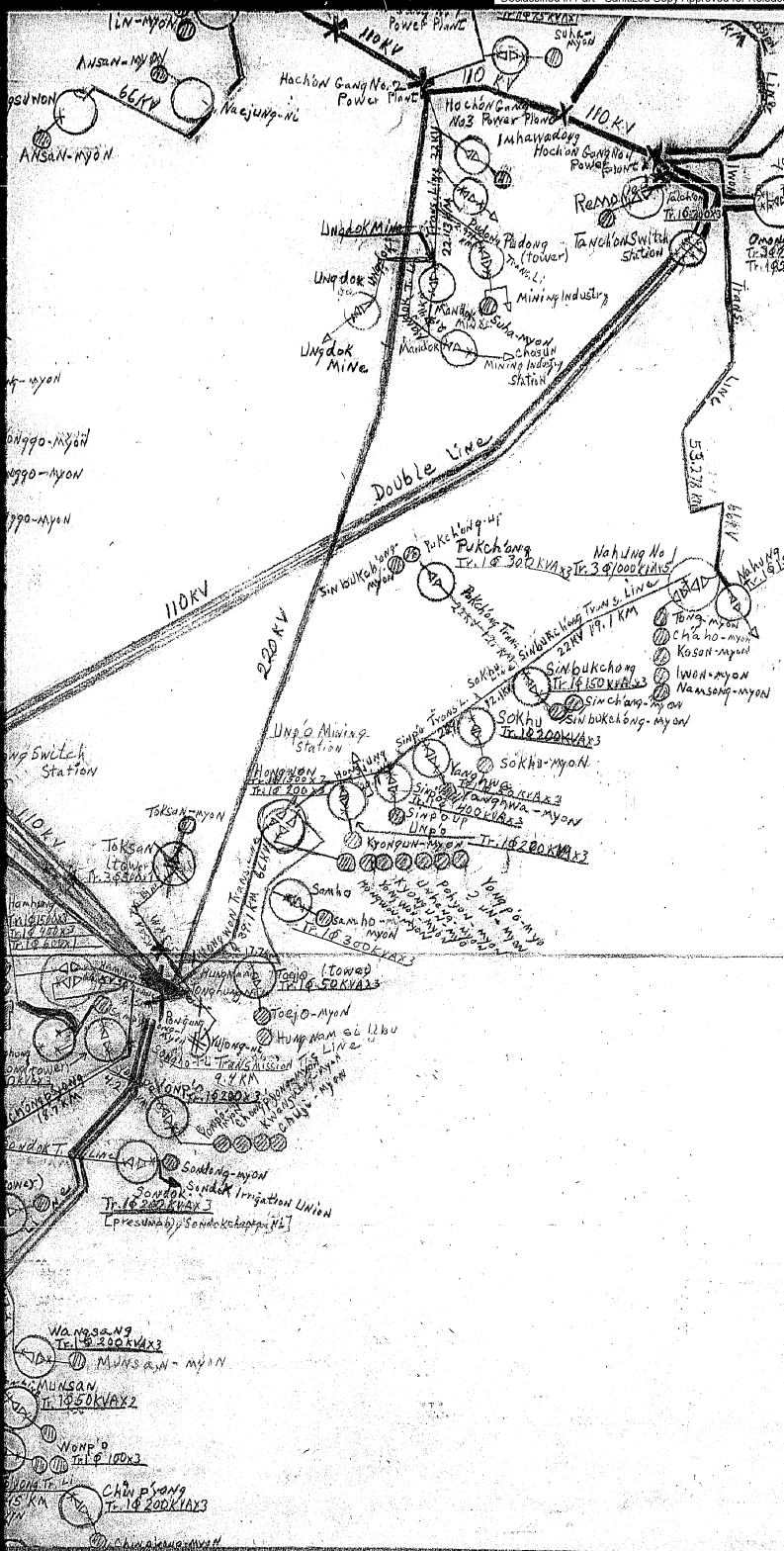
## Summary of Transformer Equipment - Wonsan Branch

Name of Transformer Station	Total output KVA	Description of Transformer	Primary Voltage KV	Secondary Voltage KV	Number of Transformer
Unbong Transformer Station	2000	1000 3φ 60	66	22	2
Wonsan Transformer Station	8660	2500 1φ " "	22	3.45	3
Inhung Transformer Station	3000	1000 3φ " "	22	3.45	3
		50 " " "	22	3.45	3
		200 " " "	"	"	3
Chondae-ri Transf. Sta.	9000	1500 1φ 60	66	3.45	6
Iryong	4500	1500 " " "	"	22	3
	2700	300 " " "	22	3.45	9
Taequang	150	50 " " "	66	"	3
No. 2 Kalma Transformer Station	7500	2500 3φ " "	66	22	3
	1000	500 3φ 60	22	3.45	2
Wonsan Transf. Sta.	130	75 1φ " "	"	"	2
Wonsang	600	200 " " "	"	"	3
Wang'o	300	100 " " "	"	"	3
Chingsook	600	200 " " "	"	"	3









Summary of Transmission Lines [Pukchang Branch]

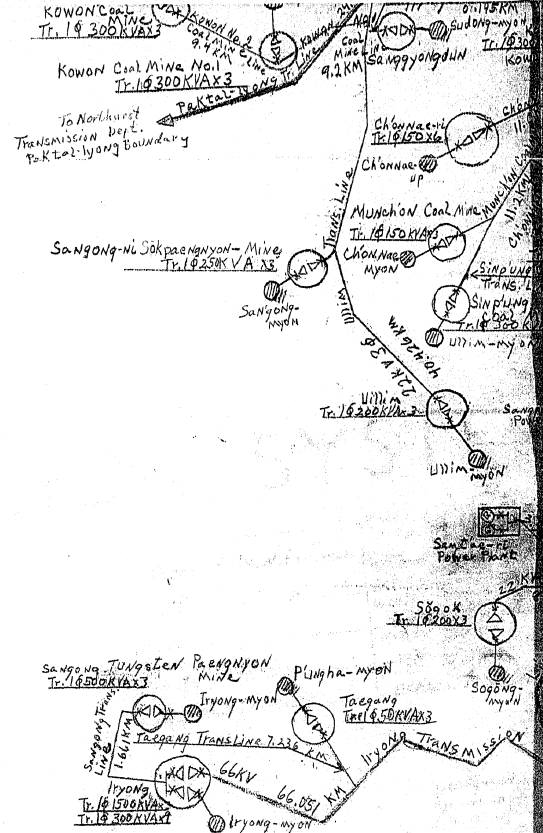
Name of Transmission Line	Section Terminals	Voltage KV	Length (meters)	Existing Wire	Remarks
Hyesan Transmission Line	From Hyesan Transf. Sta. to Hyesan	22	14.7	Bare, heavy copper wire	Original tower
Unghok	From Transf. Sta. No. 4 Tower to Unghok (Transf. Sta.)	66	53.278	"	"
Ilgon	From Kumdok Transf. Sta. to Ilgon	"	82.745	"	"
Kumdok	From Transf. Sta. Nary Power Plant to Kumdok Transf. Sta.	"	51.838	"	"
Ilgon	From post No. 276 (Nary Transf. Sta.) to Ilgon Transf. Sta.	"	51.037	"	"
Tachon	From Transf. Sta. Nary Power Plant to Tachon Transf. Sta.	"	7.638	"	"
Omang-ni Branch Line	From post No. 24 (Ilgon Transf. Sta.) to Omang-ni Transf. Sta.	"	2.3	"	"
Unghok Mine Transf. Line	From post No. 13 (Sinbukchong) to Unghok Mine Transf. Sta.	22	2.2	"	"
Sinbukchong	From (Naryong) Transf. Sta. to Sinbukchong Transf. Sta.	"	19.1	Bare heavy copper wire	7/2.0
Pukchang	From Sinbukchong to Pukchang	"	12.8	"	5.0
Sokhu	From Sinbukchong to Sokhu	"	12.1	Bare heavy twisted copper wire	7/2.6
Pukdu	From Kumdok to Pukdu	"	64.676	"	7/3.7
Yongnam	From Omang-ni to Yongnam	"	3.338	"	7/2.0
Unghok	From Transf. Sta. No. 4 Tower to Unghok Transf. Sta.	"	22.113	"	7/3.0
Pukdu Branch Transf. Line	From Kumdok to Pukdu	"	4.421	"	"
Mandok Branch Transf. Line	From Unghok to Mandok	"	2.941	"	"
Unghok Transf. Line	From post No. 214 (Unghok Transf. Sta.) to Pudong Transf. Sta.	"	29.71	"	7/2.0
Pudong	From Ilgon Transf. Sta. to Pudong	"	8.07	"	"
Waryong	From Kumdok to Waryong	"	13.434	"	7/2.3
Yangsa	From Pukdu to Yangsa	"	16.481	"	"
Chonnam	From Kumdok No. 2 to Chonnam	"	18.739	"	"
Hakso	From Waryong to Hakso	"	0.388	"	"
Imhwa-dong	From post No. 22 (Pukdu Transf. Sta.) to Imhwa-dong Transf. Sta.	"	5.91	"	"

Summary of Transformer Equipment Pukchang Branch

Name of transformer station or tower	Total output KVA	Description of Transformer	Voltage KV	No. of Transf.	Remarks
Nahung No. 1 Transformer Station	3000	1000 3φ 60	66	2	3
Nahung No. 2 Transf. Sta.	4500	1500 1φ	66	3	0
Unghok Mine	2100	300	22	3	6
Unghok Mine	300	100	22	3	2
Sinbukchong	450	150	"	3	"

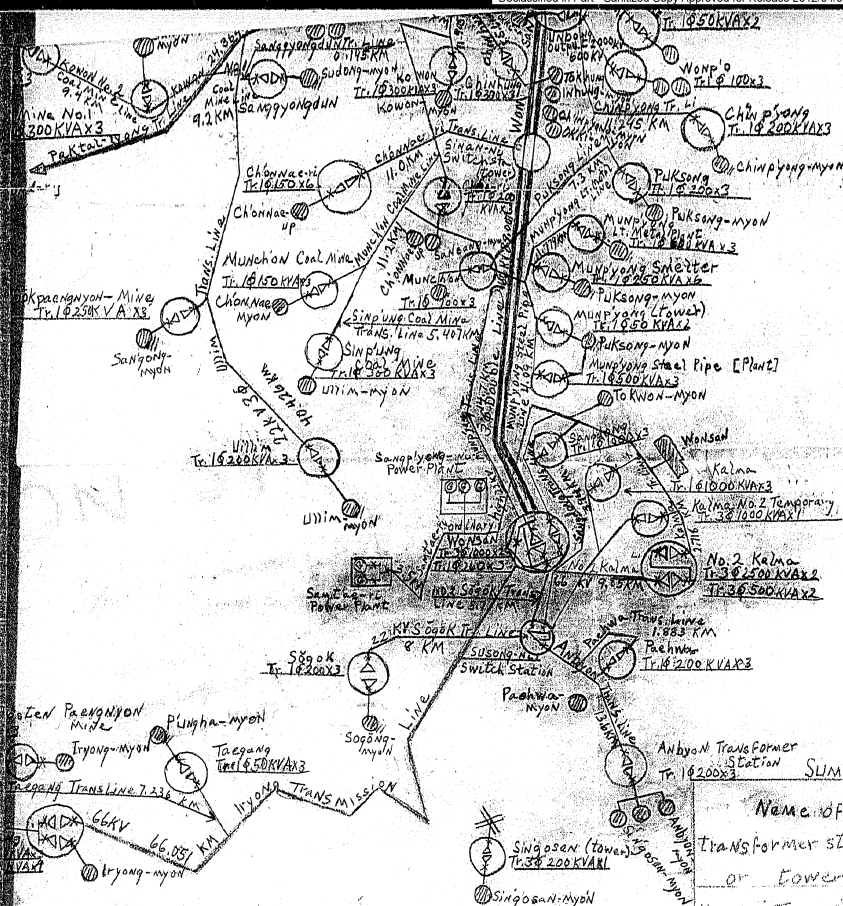


Kowon No. 2 Coal Mine	900	300	"	"	"	3	
Chungnam No. 2 Coal Mine	750	250	"	"	"	3	
Sangong	600	200	"	"	"	3	1
Ullim	900	300	"	"	"	3	
Chinhung	900	300	"	"	"	3	
Kowon	900	300	"	"	"	3	
Chewi-ri	600	200	"	"	"	3	
Muncheon Coal Mine	450	150	"	"	"	3	
Sangong Coal Mine	900	300	"	"	"	3	
Muncheon	300	100	"	"	"	3	
Poksong	600	200	"	"	"	3	
Munpyong	866	50	"	"	"	2	
Munpyong Steel Plant	1500	500	"	"	"	3	
Munpyong Smelter	1500	250	"	"	"	6	
Munpyong 22 Metal Plant	1800	600	"	"	"	3	1
Sangdong	3000	1000	"	"	"	3	1
Kalma	3000	1000	3φ	"	"	3	
Kalma No. 2 Temporary	1000	1000	"	"	"	1	
Sogok	600	200	1φ	"	"	3	
Pachwan	600	200	"	"	"	3	
Anbyon	600	200	"	"	"	3	
Sangong Tungsten Paengnyon Mine	1500	500	"	"	"	3	
Sambanghyop "tower	50	50	"	"	"	1	
Sambang	5	5	"	"	"	1	
Singosan	200	200	3φ	"	"	1	
Sangsambang	5	5	1φ	"	"	1	



Summary of TRANSMISSION LINES Hamhung Branch

Name of Transmission Line	Section Terminals	Voltage KV	Exact Length in KM	Electric wire and cable		Kind of Structure	Kind of Maintenance
				Kind	Size		
Hamhung Trans. Line	From Pongmyong Transf. Sta. to Hamhung Transf. Sta.	66	8.5	Bars heavy copper wire	7/2.3	Metal towers	
Changpyong Trans. Line	From post No. 10 Changpyong Transf. Sta. to Changpyong Transf. Sta.	22	18.7	"	6.5	Wood poles	
Sinsang	From Changpyong Transf. Sta. to Sinsang	"	18.3	"	"	"	
Yonpo	From post No. 138 Changpyong Transf. Sta. to Yonpo Transf. Sta.	"	4.2	"	7/2.3	"	
Sondok	From post No. 163 Sinsang Transf. Sta. to Sondok Transf. Sta.	"	6.0	"	7/2.0	"	
Songha-ri	From Hamhung Transf. Sta. to post No. 101 Songha-ri Transf. Sta.	"	9.4	"	"	"	
Hongwon	From post No. 101 Songha-ri Transf. Sta. to Hongwon	"	39.1	"	7/2.6	"	
Hongjung	From Hongwon to Loc. enter. Paju Switch Sta.	66	20.1	"	7/2.6	"	
Unpo	From post No. 131 Hongjung Transf. Sta. to Unpo Transf. Sta.	22	0.5	"	5.0	"	
Paju	From center Paju Switch Sta. to Sinsang Transf. Sta.	"	5.2	"	7/2.6	"	
Sinsang	From Sinsang to Sinsang	"	22.9	"	"	"	
Chonbursan	From Paju to Chonbursan	"	13.8	"	7/2.0	"	
Pungsan	From Chonbursan to Pungsan	"	7.2	"	"	"	
Chikdang	From post No. 13 Pungsan Transf. Sta. to Chikdang Transf. Sta.	66	7.5	"	7/2.3	"	
Toksan	From Chikdang Transf. Sta. to Toksan	22	23.3	"	7/2.6	"	
Special high distribution line	From Toksan to Special high distribution line	"	17.7	"	5.0	"	



N. LINES		Hamhung Branch	
Exact W. Km	Electric Wire and Cable	Structure	Kind of
	KIND		Maintenance
8.5	Bare heavy copper wire	7/2.3	Metal Towers
18.7	"	6.5	Wood poles
18.3	"	"	"
4.2	"	7/3	"
6.0	"	7/2.0	"
9.4	"	"	"
39.1	"	7/3.5 7/2.6	"
20.1	"	7/2.6	"
0.5	"	5.0	"
5.2	"	7/2.6	"
22.9	"	"	"
13.8	"	7/2.0	"
7.2	"	"	"
7.5	"	7/2.3 7/2.6	"
23.3	"	7/2.6	"

Hand-drawn map of the Singosari area showing three towers. Each tower is represented by a circle with a cross-like symbol above it. The towers are labeled: Singosari (tower) Tr. 38 200KV, Singosari-mylon, Sambang (tower) Tr. 195KV, Singosari-mylon, Sambang hip (tower) Tr. 195KV, and Singosari-mylon. The map is drawn on a grid of dots.

## SUMMARY OF TRANSFORMER EQUIPMENT HANDLING PROCEDURE

Name of Transformer Station or Tower	Total Output KVA	Description of Transformer capacity (presumed) KVA	Phase	Frequency	Voltage KV primary	KV secondary	No. of Transformers Regular	Reserve
Hanhung Transf. Station	4500 1200	1500 400	1φ "	60 "	66 66	3.45 2.2	3 3	
	<del>1500</del>	6000	3φ	"	66	3.45	1	[* Note below
Yonpo Transf. Station	600	200	1φ	"	2.2	"	3	
Chongpyong "	900	300	"	"	"	"	3	
Sondok "	600	200	"	"	"	"	3	
Sinsang "	300	100	"	"	"	"	3	
Unpo "	600	200	"	"	"	"	3	
Sinpo "	1200	400	"	"	"	"	3	
Chik Tong "	1200	200	"	"	66	"	6	
Hagaru "	900	300	"	"	"	"	3	
(presumably Pungsoang) Pungsoang Gic "	900	300	"	"	2.2	"	3	
Chonulsan "	150	50	"	"	"	"	3	
Hongwond "	2600	1500	"	"	66	2.2	3	
		200			2.2	3.45	3	
Toksam Transf. Tower	500	500	3φ	"	"	"	1	
Taejo "	150	50	1φ	"	"	"	3	
Samho "	90	30	"	"	"	"	3	
Sunpyong "	150	50	"	"	"	"	3	
Pyongyang "	87	50	"	"	"	"	2	

Wahung
Won
Siwubukch
Pikchiom
Sokhu
190ng
Omeny-u
Kayam
Tal-hon
Tongan
Kumdok
Kuradok
Kumdok
Yongyan
Pikdu
Nyon
Manido
Hye-san
Hakso
Ekanwan
Maryong
Yongwon
Inandok
Imand
Maideok
Trans
Unadok
Nandok
Inadok
Mando
Pudom

\* Note:  
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to above  
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**CONFIDENTIAL**  
**SECURITY INFORMATION**

WONP's  
11.9.100x2  
Chungpyong  
11.14.200KVA2  
Chungpyongmyon  
2.200x3

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2.200x3

Chungpyong  
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11.14.200KVA2  
Chungpyongmyon  
2.200x3

# Summary of Transformer Equipment Hamhung Branch

Name of Transformer Station or Tower	Total Output KVA	Description of Transformer	Phase	Frequency	Voltage KV	No. of Transformers
Hamhung Transf. Station	4500	1500	1φ	60	66	3
	1200	400	"	"	66	22
	10500	6000	3φ	"	66	3.45
Yongpo Transf. Station	600	200	1φ	"	22	3
Chongpyong "	900	300	"	"	"	3
Sondok "	600	200	"	"	"	3
Sinsang "	300	100	"	"	"	3
Unp'o "	600	200	"	"	"	3
Sinp'o "	1200	400	"	"	"	3
Chikstong "	1200	200	"	"	66	6
Hagang "	700	300	"	"	"	3
Pungsoyong "	900	300	"	"	22	3
Chonbulan "	150	50	"	"	"	3
Hamgwon "	2600	1500	"	"	66	22
		200	"	"	22	3.45
Toksam Transf. Tower	500	500	3φ	"	"	1
Tojo "	150	50	1φ	"	"	3
Samho "	90	30	"	"	"	3
Sampyong "	150	50	"	"	"	3
Pungsoyong "	87	50	"	"	"	2

Hamhung Transf. Station	4500	1500	1φ	66	3
WON HON MIN "	2100	300	"	22	3
		200	"	"	6
WON HON MIN "	300	100	"	"	3
Sinbukchang "	450	150	"	"	3
		100	"	"	2
Pikchang "	900	300	"	"	3
Sokhu "	600	200	"	"	3
Yongpo "	1730	1000	"	66	22
		300	"	22	6
Yongpo "	3500	1000	3φ	66	22
		500	1φ	"	3
Yongpo "	2000	1000	3φ	"	22
Tadukhon "	900	300	1φ	66	3
Yongpo "	900	300	"	"	3
Kumdok No. 2 "	900	300	"	22	3
Kumdok "	4500	1500	"	"	3
Kumdok No. 1 "	2250	750	"	"	3
Yongpo "	600	200	"	"	3
Pokdu "	900	300	"	"	3
Yongpo "	1730	1000	"	66	22
		300	"	22	3
Hamgyodok "	600	200	"	"	3
Yongpo "	600	200	"	"	3
Hakso "	1200	200	"	"	6
Chonnam "	900	300	"	"	3
Yongpo "	1800	300	"	"	6
Yongpo Transf. Tower	75	75	"	"	1
Yongpo "	150	50	"	"	3
Yongpo Transf. Sta.	1100	200	"	"	3
		170	"	"	3
Mandok Aerial Cable	87	50	"	"	2
Mandok Transf. Station	300	100	"	"	3
Yongpo "	1500	500	"	"	3
Mandok "	225	75	"	"	3
Pudong "	1200	300	"	"	3
		100	"	"	3

\* Note: Remark is made that this Transformer was installed and increase to above 6 Transformers. The figures 10500 are crossed out as shown.

- 1500x7
- Removed
- 100x2
- 200x3
- 1000x1
- 200x1
- Removed
- Single phase
- Single phase